

COMMUNICABLE DISEASE CENTER

Morbidity and Mortality



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U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE PUBLIC HEALTH SERVICE

EPIDEMIOLOGIC NOTES AND REPORTS

TYPHOID FEVER - Rockville, Maryland

On April 19, 1966, a 3-year-old child from Rockville, Maryland, developed chills and fever accompanied by pharyngeal injection and palpable anterior cervical nodes. On April 21 the child was admitted to hospital because of vomiting, diarrhea, and a temperature of 105°F. Treatment with chloramphenicol was initiated on admission, and a stool culture was subsequently reported to contain *Salmonella typhi*, phage type C.

Epidemiological investigations revealed that the household was exceptionally clean with a good municipal water supply and sewage disposal. None of the other

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members of the family had been ill, and none had recently travelled away from the community. Four of the adult members of the family had had typhoid fever in the past, two while living in Greece and two in Albania. Three of the four adults had been in this country for a number of years, but the fourth was the 65-year-old maternal grandmother who had arrived in the United States from Athens, (Continued on page 244)

CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
 (Cumulative totals include revised and delayed reports through previous weeks)

DISEASE	28th WEEK ENDED		MEDIAN 1961 - 1965	CUMULATIVE, FIRST 28 WEEKS		
	JULY 16, 1966	JULY 17, 1965		1966	1965	MEDIAN 1961 - 1965
Aseptic meningitis	57	33	49	862	807	792
Brucellosis	8	4	14	114	123	214
Diphtheria	-	3	3	84	87	151
Encephalitis, primary:						
Arthropod-borne & unspecified	33	25	---	718	826	---
Encephalitis, post-infectious	14	16	---	483	441	---
Hepatitis, serum	23			703		
Hepatitis, infectious	489	512	607	17,857	19,171	24,792
Measles (rubeola)	1,871	2,180	4,817	182,491	232,261	370,898
Poliomyelitis, Total (including unspecified)	1	2	11	30	26	114
Paralytic	1	2	8	28	22	94
Nonparalytic	-	-	---	-	4	---
Meningococcal infections, Total	38	39	38	2,397	2,041	1,513
Civilian	37	38	---	2,135	1,871	---
Military	1	1	---	262	170	---
Rubella (German measles)	507	---	---	39,438	---	---
Streptococcal sore throat & Scarlet fever	3,876	4,515	3,786	272,740	253,248	222,069
Tetanus	7	6	---	82	124	---
Tularemia	6	10	---	80	132	---
Typhoid fever	4	7	12	164	197	218
Typhus, tick-borne (Rky. Mt. Spotted fever)	14	15	---	100	114	---
Rabies in Animals	51	124	94	2,359	2,629	2,326

NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax: N.H.-1	4	Botulism:	4
Leptospirosis:	36	Trichinosis: Penn.-2, Ohio-1	56
Malaria: N.Y. City-1, Penn.-3, Miss.-1, Fla.-1, Ariz.-1	161	Rabies in Man:	1
Psittacosis: Mass.-1	24	Rubella, Congenital Syndrome:	18
Typhus, murine: Texas-1	13	Plague: N.Mex.-1*	2

*DELAYED REPORT

RECOMMENDATION OF THE PUBLIC HEALTH SERVICE ADVISORY
COMMITTEE ON IMMUNIZATION PRACTICES

The Public Health Service Advisory Committee on Immunization Practices meeting on May 16, 1966, issued the following recommendation regarding influenza immunization and control in the civilian population.

INFLUENZA VACCINE - CIVILIAN USE - 1966-67

Influenza Prospectus - 1966-67 - United States

Influenza was reported in 49 of the 50 States during the winter and spring of 1965-66 with laboratory confirmations in 47. The season was noteworthy in that sometimes sharp and extensive outbreaks both of types A and B influenza occurred. Type A2 virus was recognized in most of the western States while type B predominated east of the Mississippi River, particularly in States along the Atlantic Coast. In 20 States, activity of both types of influenza viruses was demonstrated.

Although school absenteeism associated with type B influenza was elevated in New England, and to a lesser extent in other eastern States, correspondingly increased industrial absenteeism was not observed. In areas where type A influenza virus was responsible for widespread disease, more indices of the total extent of involvement were recognized: Increased industrial absenteeism often accompanied that observed in schools, the number of hospital admissions was elevated, and in the Pacific division, pneumonia-influenza mortality was higher than recorded since 1960, when type A influenza was last widely prevalent.

In general, excess mortality attributable to pneumonia and influenza was evident primarily in areas where A2 strains were predominant. Little evidence of excess mortality was noted in areas where only type B strains occurred.

Major antigenic changes were not demonstrated in the type A2 and B influenza virus strains recovered during the year, although minor variations were apparent. Since evidence has not indicated a major alteration in antigenicity of either A or B strains in recent years, the level of general population susceptibility to the currently prevalent strains is not considered to be high.

Because of the widespread recognition of both types A and B influenza viruses in 1965-66 and the characteristics of infecting strains, it is felt that relatively little influenza activity will be recognized in 1966-67. It is a reasonable expectation, however, that limited outbreaks of type A2 influenza will occur in parts of the U.S. not experiencing type A disease in 1964-65 or 1965-66. Similarly, the possibility of some type B influenza is recognized, particularly in the southwest.

Influenza Vaccine

Influenza vaccine has shown protective value when the viruses incorporated in the vaccine have been antigenically similar to those causing the epidemic disease. Exceptions to the apparent effectiveness of influenza vaccine have occurred, however, when significant antigenic shift in the prevalent virus was recognized after the vaccine had been formulated (for example, in 1947, 1957, and to a lesser extent in 1962). That influenza vaccine diminishes mortality from influenza, in particular among the aged and chronically ill, is a reasonable assumption but one based upon inference.

Vaccine Usage

Annual influenza immunization is not currently indicated for all individuals, but vaccine should be given regularly to persons in groups which are known to experience high mortality from epidemic influenza. Such groups include:

Chronically Ill

Persons of all ages who suffer from chronic debilitating disease, e.g., chronic and cardiovascular, pulmonary, renal or metabolic disorders, in particular:

- A. Patients with rheumatic heart disease, especially those with mitral stenosis.

- B. Patients with other cardiovascular disorders such as arteriosclerotic heart disease and hypertension, especially those with evidence of frank or incipient cardiac insufficiency.
- C. Patients with chronic bronchopulmonary diseases, as for example, chronic asthma, chronic bronchitis, bronchiectasis, pulmonary fibrosis, pulmonary emphysema, pulmonary tuberculosis.
- D. Patients with diabetes mellitus and Addison's disease.

Patients residing in nursing homes, chronic disease hospitals, and other such environments should be considered at particular risk since their more crowded living arrangements may allow greater spread of disease once an outbreak has been established.

Older Age Groups

During major influenza outbreaks, especially when caused by type A virus, increased mortality has regularly been recognized in persons over 45 years of age and even more notably in those over age 65—this has been particularly notable when underlying chronic illnesses are also evident.

Pregnancy—Some increased mortality was observed among pregnant women during the 1957-58 influenza A2 epidemic both in this country and abroad. Similar data are not available for subsequent years and, therefore, routine influenza immunization during pregnancy is not recommended unless the individual also falls into one of the above noted "high risk" categories.

Time of Vaccination

Vaccination should begin as soon as practicable after September 1 and ideally should be completed by mid-December. It is important that immunization be carried out before influenza occurs in the immediate area since there is a two-week interval before the development of antibodies.

Vaccine Composition

Recently isolated influenza viruses show minor antigenic alteration of both type A2 and B strains. Because these variations have generally not been interpreted as being of major significance, composition of the 1966-67 vaccine is unchanged from that prepared for 1965-66. (See Polyvalent Influenza Vaccine Formulation—1966-67).

Dosage and Schedule

Primary Immunization

Individuals not vaccinated since July 1963 when the last major change in vaccine formulation was made should receive an initial subcutaneous dose of polyvalent vaccine followed by a second dose two months later. It is to be pointed out, however, that even a single dose can afford significant protection. A second dose given as early as two weeks following the first will enhance the protection.

Summary:

Adults and children over 10 years

1.0 ml. subcutaneously on two occasions as specified above

Children 6 to 10 years*

0.5 ml. subcutaneously on two occasions as specified above

Children 3 months through 5 years*

0.1–0.2 ml. of vaccine given subcutaneously on two occasions, separated by one to two weeks followed by a third dose of 0.1–0.2 ml. about two months later.

Booster Immunization

Individuals vaccinated since July 1963 need receive only a single booster of vaccine at the dose level specified for the primary series. For those in the older age groups who have previously experienced undue reactions to influenza vaccine, a revaccination dose of 0.1 ml. given by a careful intracutaneous injection can be expected to give an antibody response which is somewhat comparable to that induced by the 1.0 ml. subcutaneous dose. The intracutaneous route is not recommended, however, for use in other than these special cases.

Contraindication—Since the vaccine viruses are produced in eggs, the vaccine should not be administered to those who are hypersensitive to eggs or egg products.

*Since febrile reactions in this age group are common following influenza vaccination, an antipyretic may be indicated.

Polyvalent Influenza Vaccine Formulation—1966-67

Type	Strain	CCA Units per ml.
A	PR8	100
A1	Ann Arbor/1/57	100
A2	Japan/170/62	100
A2	Taiwan/1/64	100
B	Maryland/1/59	200
		600

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CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDED JULY 16, 1966 AND JULY 17, 1965 (28th WEEK) - CONTINUED

AREA	MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS, TOTAL			POLIOMYELITIS				RUBELLA
	1966	Cumulative		1966	Cumulative		Total		Paralytic		
		1966	1965		1966	1965	1966	1965	1966	1966	
UNITED STATES...	1,871	182,491	232,261	38	2,397	2,041	1	2	1	28	507
NEW ENGLAND.....	8	2,158	36,473	2	110	103	-	-	-	-	61
Maine.....	2	192	2,753	1	9	12	-	-	-	-	6
New Hampshire.....	-	65	378	-	9	5	-	-	-	-	2
Vermont.....	-	219	1,231	-	4	5	-	-	-	-	1
Massachusetts.....	4	748	19,131	1	43	34	-	-	-	-	24
Rhode Island.....	-	72	3,881	-	12	14	-	-	-	-	3
Connecticut.....	2	862	9,099	-	33	33	-	-	-	-	25
MIDDLE ATLANTIC.....	67	17,583	13,830	4	275	270	-	-	-	-	46
New York City.....	20	8,178	2,024	-	39	46	-	-	-	-	10
New York, Up-State.	33	2,242	3,914	3	79	72	-	-	-	-	36
New Jersey.....	6	1,856	2,341	1	77	73	-	-	-	-	-
Pennsylvania.....	8	5,307	5,551	-	80	79	-	-	-	-	-
EAST NORTH CENTRAL...	660	66,538	52,816	4	373	271	-	-	-	-	171
Ohio.....	14	6,226	8,694	2	100	71	-	-	-	-	4
Indiana.....	76	5,549	1,701	-	64	37	-	-	-	-	52
Illinois.....	94	11,189	2,405	1	73	72	-	-	-	-	22
Michigan.....	274	13,363	25,530	-	99	57	-	-	-	-	37
Wisconsin.....	202	30,211	14,486	1	37	34	-	-	-	-	56
WEST NORTH CENTRAL...	47	8,522	16,222	1	132	106	-	1	-	1	6
Minnesota.....	3	1,621	617	-	31	21	-	-	-	1	-
Iowa.....	22	5,229	8,935	-	21	7	-	1	-	-	1
Missouri.....	-	523	2,550	1	52	48	-	-	-	-	-
North Dakota.....	22	1,034	3,562	-	7	7	-	-	-	-	5
South Dakota.....	-	40	109	-	4	2	-	-	-	-	-
Nebraska.....	-	75	449	-	8	10	-	-	-	-	-
Kansas.....	NN	NN	NN	-	9	11	-	-	-	-	-
SOUTH ATLANTIC.....	161	14,338	24,048	10	399	401	-	-	-	1	72
Delaware.....	7	250	498	-	4	5	-	-	-	-	-
Maryland.....	15	2,070	1,067	-	39	38	-	-	-	-	9
Dist. of Columbia..	1	377	69	1	10	7	-	-	-	-	-
Virginia.....	32	1,939	3,930	-	50	47	-	-	-	-	30
West Virginia.....	56	4,968	13,230	1	16	23	-	-	-	-	14
North Carolina.....	14	389	369	4	99	78	-	-	-	-	-
South Carolina.....	26	641	993	-	45	56	-	-	-	-	1
Georgia.....	1	231	604	1	57	51	-	-	-	1	-
Florida.....	9	3,473	3,288	3	79	96	-	-	-	-	18
EAST SOUTH CENTRAL...	250	19,152	13,354	1	210	161	-	-	-	2	59
Kentucky.....	100	4,653	2,387	-	79	67	-	-	-	-	8
Tennessee.....	130	11,904	7,644	-	68	47	-	-	-	-	50
Alabama.....	8	1,622	2,252	1	44	28	-	-	-	1	1
Mississippi.....	12	973	1,071	-	19	19	-	-	-	1	-
WEST SOUTH CENTRAL...	267	23,252	29,985	7	350	288	1	1	1	23	2
Arkansas.....	-	966	1,080	1	32	14	-	-	-	-	-
Louisiana.....	-	91	91	3	132	162	-	-	-	-	-
Oklahoma.....	2	467	200	-	18	17	-	-	-	1	-
Texas.....	265	21,728	28,614	3	168	95	1	1	1	22	2
MOUNTAIN.....	136	11,422	19,007	2	77	61	-	-	-	-	44
Montana.....	4	1,789	3,613	-	4	2	-	-	-	-	-
Idaho.....	53	1,454	2,636	-	5	8	-	-	-	-	3
Wyoming.....	-	143	834	-	6	4	-	-	-	-	-
Colorado.....	9	1,172	5,475	2	40	13	-	-	-	-	17
New Mexico.....	25	1,093	657	-	10	10	-	-	-	-	-
Arizona.....	33	5,182	1,168	-	8	16	-	-	-	-	20
Utah.....	12	546	4,422	-	-	6	-	-	-	-	4
Nevada.....	-	43	202	-	4	2	-	-	-	-	-
PACIFIC.....	275	19,526	26,526	7	471	380	-	-	-	1	46
Washington.....	7	3,412	7,179	-	35	31	-	-	-	1	6
Oregon.....	72	1,564	3,113	-	30	28	-	-	-	-	14
California.....	99	14,119	12,538	7	387	301	-	-	-	-	18
Alaska.....	89	310	142	-	15	13	-	-	-	-	6
Hawaii.....	8	121	3,554	-	4	7	-	-	-	-	2
Puerto Rico.....	52	2,376	2,140	1	9	4	-	-	-	-	-

Morbidity and Mortality Weekly Report

CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
 FOR WEEKS ENDED
 JULY 16, 1966 AND JULY 17, 1965 (28th WEEK) - CONTINUED

AREA	STREPTOCOCCAL SORE THROAT & SCARLET FEVER	TETANUS		TULAREMIA		TYPHOID		TYPHUS FEVER TICK-BORNE (Rky. Mt. Spotted)		RABIES IN ANIMALS	
	1966	1966	Cum. 1966	1966	Cum. 1966	1966	Cum. 1966	1966	Cum. 1966	1966	Cum. 1966
UNITED STATES...	3,876	7	82	6	80	4	164	14	100	51	2,359
NEW ENGLAND.....	544	-	2	-	1	-	4	-	1	1	47
Maine.....	42	-	-	-	-	-	-	-	-	1	17
New Hampshire.....	5	-	-	-	-	-	-	-	-	-	13
Vermont.....	39	-	-	-	-	-	-	-	-	-	15
Massachusetts.....	92	-	2	-	1	-	1	-	1	-	2
Rhode Island.....	41	-	-	-	-	-	-	-	-	-	-
Connecticut.....	325	-	-	-	-	-	3	-	-	-	-
MIDDLE ATLANTIC.....	153	1	11	-	-	-	33	-	22	3	162
New York City.....	6	1	4	-	-	-	15	-	-	-	-
New York, Up-State.	145	-	2	-	-	-	6	-	10	2	151
New Jersey.....	NN	-	1	-	-	-	6	-	8	-	-
Pennsylvania.....	2	-	4	-	-	-	6	-	4	1	11
EAST NORTH CENTRAL...	267	-	7	-	12	-	24	1	6	10	332
Ohio.....	22	-	3	-	3	-	10	-	3	3	168
Indiana.....	16	-	1	-	3	-	1	-	-	-	73
Illinois.....	40	-	1	-	5	-	3	1	3	4	33
Michigan.....	127	-	2	-	-	-	4	-	-	-	28
Wisconsin.....	62	-	-	-	1	-	6	-	-	3	30
WEST NORTH CENTRAL...	209	-	6	1	6	-	13	-	2	13	529
Minnesota.....	1	-	1	-	-	-	-	-	-	4	120
Iowa.....	25	-	1	-	-	-	4	-	-	4	112
Missouri.....	11	-	4	-	2	-	5	-	1	1	171
North Dakota.....	108	-	-	-	-	-	1	-	-	2	13
South Dakota.....	12	-	-	1	1	-	-	-	-	-	51
Nebraska.....	2	-	-	-	1	-	1	-	-	1	16
Kansas.....	50	-	-	-	2	-	2	-	1	1	46
SOUTH ATLANTIC.....	393	-	18	-	8	2	31	9	49	7	303
Delaware.....	39	-	-	-	-	-	-	-	-	-	-
Maryland.....	48	-	-	-	1	1	7	1	15	-	-
Dist. of Columbia..	-	-	-	-	-	1	1	-	-	-	-
Virginia.....	105	-	3	-	2	-	8	4	15	4	182
West Virginia.....	143	-	-	-	1	-	1	-	-	-	39
North Carolina.....	-	-	1	-	2	-	3	-	11	1	2
South Carolina.....	7	-	1	-	1	-	5	3	4	-	-
Georgia.....	3	-	6	-	1	-	1	1	4	2	48
Florida.....	48	-	7	-	-	-	5	-	-	-	32
EAST SOUTH CENTRAL...	735	2	7	2	17	-	19	3	11	3	297
Kentucky.....	67	-	1	-	2	-	3	1	2	-	50
Tennessee.....	563	-	1	-	9	-	7	1	8	3	232
Alabama.....	74	-	3	-	4	-	5	1	1	-	12
Mississippi.....	31	2	2	2	2	-	4	-	-	-	3
WEST SOUTH CENTRAL...	531	2	18	1	28	2	15	1	6	8	492
Arkansas.....	1	-	2	1	21	-	1	1	2	1	53
Louisiana.....	-	-	4	-	3	1	5	-	-	-	22
Oklahoma.....	1	-	1	-	3	-	4	-	4	1	131
Texas.....	529	2	11	-	1	1	5	-	-	6	286
MOUNTAIN.....	677	-	1	1	5	-	8	-	3	-	44
Montana.....	6	-	-	1	2	-	-	-	-	-	7
Idaho.....	93	-	-	-	-	-	-	-	-	-	-
Wyoming.....	7	-	-	-	-	-	-	-	-	-	-
Colorado.....	339	-	1	-	-	-	3	-	2	-	7
New Mexico.....	81	-	-	-	1	-	-	-	1	-	6
Arizona.....	79	-	-	-	1	-	1	-	-	-	22
Utah.....	72	-	-	-	1	-	3	-	-	-	-
Nevada.....	-	-	-	-	-	-	1	-	-	-	2
PACIFIC.....	367	2	12	1	3	-	17	-	-	6	153
Washington.....	21	-	-	-	-	-	2	-	-	-	1
Oregon.....	11	-	1	-	-	-	1	-	-	-	-
California.....	265	2	11	1	3	-	12	-	-	6	152
Alaska.....	24	-	-	-	-	-	-	-	-	-	-
Hawaii.....	46	-	-	-	-	-	2	-	-	-	-
Puerto Rico.....	6	1	31	-	-	-	6	-	-	-	8

EPIDEMIOLOGIC NOTES AND REPORTS

TYPHOID FEVER - Rockville, Maryland

(Continued from front page)

Greece, during the first week of January 1966. She had had typhoid fever in 1948 while living in Athens. Rectal swab cultures were reported negative for all of the members of the family except for the grandmother whose culture revealed three colonies of *S. typhi*, phage type C.

The 3-year-old child made an uneventful recovery and was discharged after 10 days in the hospital. Two of the adult family associates were in the restaurant business in another city, and the health officer there prohibited them from handling food until three rectal swab cultures were checked and found negative for *S. typhi*.

(Reported by Dr. Ernest H. Joy, Communicable Disease Division, and Dr. Roy P. Lindgren, Health Officer, Montgomery County Health Department, Rockville, Maryland.)

Editorial Note:

This case is rather characteristic of the experience with typhoid fever in this country at the present time. Between 400 and 500 cases of typhoid fever are reported each year, most of which can be traced either to a carrier or to travel to a foreign endemic area. Older women are particularly likely to become long-term carriers after infection with *S. typhi*.

ERRATUM, Vol. 15, No. 27, p. 227:

In the 1965 Annual Surveillance Summary of paralytic poliomyelitis, the titles of the two figures should be reversed. Figure 1 should read "Paralytic Poliomyelitis, 1965 - 61 Cases by County, United States" and Figure 2 should read "Paralytic Poliomyelitis Cases by Date of Onset, 1961-1965."

THE MORBIDITY AND MORTALITY WEEKLY REPORT, WITH A CIRCULATION OF 15,600, IS PUBLISHED AT THE COMMUNICABLE DISEASE CENTER, ATLANTA, GEORGIA.

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IN ADDITION TO THE ESTABLISHED PROCEDURES FOR REPORTING MORBIDITY AND MORTALITY, THE COMMUNICABLE DISEASE CENTER WELCOMES ACCOUNTS OF INTERESTING OUTBREAKS OR CASE INVESTIGATIONS WHICH ARE OF CURRENT INTEREST TO HEALTH OFFICIALS AND WHICH ARE DIRECTLY RELATED TO THE CONTROL OF COMMUNICABLE DISEASES. SUCH COMMUNICATIONS SHOULD BE ADDRESSED TO:

THE EDITOR
MORBIDITY AND MORTALITY WEEKLY REPORT
COMMUNICABLE DISEASE CENTER
ATLANTA, GEORGIA 30333

NOTE: THE DATA IN THIS REPORT ARE PROVISIONAL AND ARE BASED ON WEEKLY TELEGRAMS TO THE CDC BY THE INDIVIDUAL STATE HEALTH DEPARTMENTS. THE REPORTING WEEK CONCLUDES ON SATURDAY; COMPILED DATA ON A NATIONAL BASIS ARE RELEASED ON THE SUCCEEDING FRIDAY.

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